United States Patent Office 3,369,952 Patented Feb. 20, 1968

3,369,952

LABEL DISPENSER

Nelson M. Rieger, Dayton, Ohio, assignor to Presto Adhesive Paper Company, Incorporated, Miamisburg, Ohio, a corporation of Ohio

Filed Dec. 24, 1964, Ser. No. 420,951
9 Claims. (Cl. 156—577)

This invention relates to apparatus for applying labels to articles, and particularly to a label dispenser which is both automatic and portable.

Labels having a pressure sensitive on one side can be purchased in large quantities on an elongated paper tape which is coiled for ease in handling. The labels are disposed end to end on this tape and can be removed either manually or by automatic machines which are disposed in a permanent location along a conveyor to remove the labels from this tape and apply them only to containers of uniform configuration as they move along the conveyor. These permanently installed label dispensers are thus suited for use with uniformly shaped objects and therefore it is impossible to use them to apply the labels to objects of different shapes and in different locations. For example, the machines cannot be used to apply labels to a stack of articles which is in a storage warehouse, nor can they apply the labels to a surface of an irregular shaped object, such as a tire.

Accordingly, an important object of this invention is to provide a lightweight label dispenser which is portable so that it can be carried to the objects to which the labels are to be applied thus enabling the labels to be secured in place on objects of different size and configuration and while they are in a stored condition.

Another object of this invention is to provide a portable label dispenser which removes labels from an elongated tape and applies them to objects of substantially any configuration, and particularly to provide a label dispenser of the aforesaid type which is automatically operated by the touch of a trigger switch to apply the label to the object with a minimum of difficulty and a maximum of speed.

A further object of this invention is to provide a portable label dispenser which is adapted to handle rolls of labels of different sizes and to reel up the tape after the labels have been removed therefrom, and particularly to provide a portable power operated label dispenser which is simple in design for maximum dependability and long life while being comparatively inexpensive in cost.

Other objects and advantages will be apparent from the following description, the accompanying drawings and the appended claims.

In the drawings:

FIG. 1 is a perspective view of the invention shown in its operative position applying the label to a square carton;

FIG. 2 is a fragmentary side view of the label dispenser without the drive belt and showing the manner in which the labels are removed from the tape;

FIG. 3 is a sectional view taken along the line 3—3 of FIG. 2;

FIG. 4 is another perspective view illustrating the movement of the tape through the label dispenser;

FIG. 5 is a plan view, partially in section, of the label dispenser;

FIG. 6 is a fragmentary section view showing a roll of tape having a smaller inside diameter mounted on the unreeling mechanism;

FIG. 7 is a rear view of the handle and drive mechanism for the invention;

FIG. 8 is a sectional view taken along the line 8—8 of FIG. 2; and

FIG. 9 is another sectional view taken along the line 9—9 of FIG. 2.

Referring to the drawings wherein a preferred embodiment of the invention is shown, FIG. 1 illustrates the portable label dispenser **10** which includes a flat mounting plate **11** having a drive mechanism **12** mounted on one side thereof, and a tape conveying mechanism **14** on the other side thereof. The mounting plate **11** is rigid and its outer configuration is designed so that the outer edges thereof project beyond most of the components of the tape mechanism **14**, and this plate may be made of any suitable strong, lightweight material, e.g., formica plastic.

The drive mechanism **12** (FIG. 5) consists of a small electrical motor **16** secured at one end **17** to the mounting plate **11** by the brackets **20** which consists of the elongated frame members **21** and **22** (FIG. 7) having their bases **23** and **24** secured to the mounting plate **11** by the screws **25**. The other ends **26** and **27** of these members are secured to the motor **16** by the screws **30** (FIG. 5). The brace **31** extends between the frame members **21** and **22** and rigidly interconnects them for adding strength to this bracket.

The other end **33** of the motor **16** has a worm gear unit **35** mounted rigidly thereto for reducing the output speed of the motor **16** and for changing its direction 90 degrees, as will be seen. The gear unit **35** has a rectangular plate **36** on the end thereof which is secured to the mounting plate **11** by the four bolts **38**, as shown in FIGS. 2 and 9. The plate **36** has an extension **40** thereon which passes through a complementary opening **41** in the mounting plate **11**, and the drive shaft **43** of the gear reduction unit **35** extends therethrough to the opposite side of the mounting plate **11** as shown in FIG. 8. The threaded pin **44** (FIG. 9) is received in a complementary threaded bore **45** which rigidly locks the gear reduction unit **35** to the plate **36**, and thus the motor **16** and the gear reduction unit **35** are mounted securely on the mounting plate **11**.

The motor **16** has a handle **46** (FIG. 5) thereon in the form of a pistol type grip with a trigger switch **47** at the base thereof adjacent the motor **16** so that the operator can energize the motor **16** by merely pulling the trigger switch **47** while the dispenser **10** is supported by the grip **46**. A suitable source of electrical current is supplied to the motor **16** through the conductor **48**.

An elongated driving gear **50** (FIG. 8) is secured against rotation on the drive shaft **43** of the gear reduction unit **35** by the pin **51** which is received in a slot **52** (FIG. 8) in the end of the drive shaft **43** and the complementary slots **54** (FIG. 2) in the internal diameter of the elongated gear **50**. Both the gear **50** and the pin **51** are held in place against axial movement by the snap ring **56** which engages a groove in the end of the shaft **43**. An idler gear **57** is mounted immediately adjacent this drive gear and is slightly longer in length (FIG. 8) and this idler gear is held in place by the elongated bolt **60** whose head **61** is larger than the bore **63** extending through the gear **57**. The bolt **60** is threadedly received within the threaded bore **64** in the plate **36** and bearing **65** is provided between the plate **36** and the gear **57** so that the latter rotates freely on this mounting shaft. Both the gears **50** and **57** have teeth **66** of complementary design so that their engagement causes the drive gear **50** to rotate the idler gear **57**. However, the teeth **66** of these gears are rather loosely intermeshed so that the paper tape **70** can be fed therethrough, as will be further explained.

An annular groove **72** (FIG. 8) is formed circumferentially around the outermost end of the idler gear **57** for receiving the drive or rewind spring **73** which drives the take-up roll **75**. At the lowermost part of the groove **72**